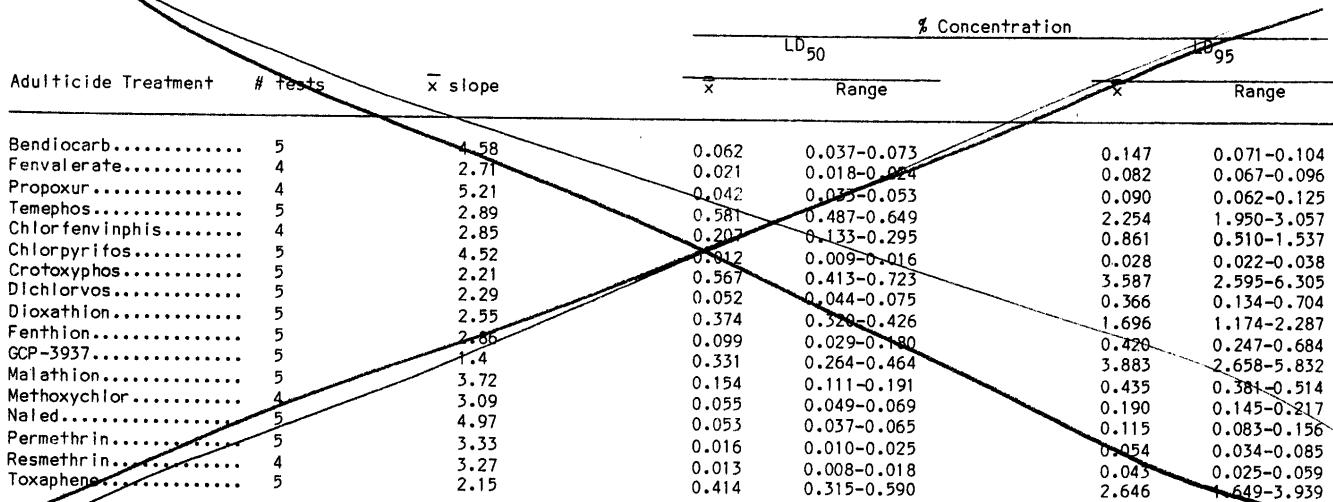


M-1672
1982MEDICAL AND VETERINARY
(Holbrook, cont'd.)

LABORATORY TESTING
Imported fire ant: Solenopsis invicta Buren

DANIEL WOJCIK

D. F. Williams and C. S. Lofgren (418)
USDA, ARS
Insects Affecting Man & Animals Research Laboratory
P. O. Box 14565
Gainesville, FL 32604

EVALUATION OF INSECTICIDES AS BAITS FOR IMPORTED FIRE ANTS IN LABORATORY SCREENING TESTS, 1979: Insecticides that show promise in preliminary screening tests by causing delayed toxicity are further tested against entire laboratory colonies of imported fire ants. The chemicals are formulated in a bait and fed to colonies that have been starved for 5 days just prior to the test. The toxic bait (5 g/colony) is placed in a tray containing the colony for 24-96 h after which it is replaced with the standard laboratory diet. Observations on colony activity and mortality are recorded weekly. The test is continued until the queen, brood (larvae and pupae) and an estimated 90% or more of the workers are dead or the colony recovers and returns to normal.

AC-217,300 (American Cyanamid Company) was a very effective toxicant but formulations of corn cob grits gave slower kill (20-24 wks) than those made with pre-gel defatted corn grits, pre-gel degerned corn grits and puffed corn (4-8 wks). These results correlate with the amount of oil, and thus toxicant, available to the ants on corn cob grits (15% compared to 30%). The chemical M-8174 (Montedison, USA, Inc.) gave poor control, with only 1 colony being killed. Both ferriamicide and mirex gave excellent control.

Toxicant and formulation	# of colonies	Bait Composition (%)		Avg % mortality after indicated number of weeks ^{6/}						
		SB0 ^{5/}	Carrier	1	4	8	12	16	20	24
AC-217,300 0.375% on CCG ^{1/}	2	15	85	50	50	60	80	90	D	
AC-217,300 0.75% on CCG.....	6	15	85	42	60	70	82	90	99	D
AC-217,300 0.75% on PDGCG ^{2/}	2	30	70	68	99	D				
AC-217,300 0.75% on PDGG ^{3/}	2	30	70	48	85	D				
AC-217,300 0.75% on PC ^{4/}	2	30	70	45	99	D				
M-8174 0.015% on CCG.....	2	15	85	18	25	28	40	52	60	DR
M-8174 0.03% on PC.....	2	30	70	43	58	R				
M-8174 0.3% on PC.....	2	30	70	6	9	R				
Ferriamicide 0.3% on CCG.....	1	15	85	2	50	99	D			
Mirex 0.1% on CCG.....	2	15	85	63	93	D				
Untreated check.....	7	--	--	1	1	3	4	4	4	4

1/CCG = corn cob grits.

2/PDGG = pre-gel defatted corn grits.

3/PDGG = pre-gel degerned corn grits.

4/PC = puffed corn.

5/SBO = soybean oil.

6/Fate of colonies indicated at end of each column by D = dried, R = recovered, and DR = one colony died and one colony recovered.